



DISCRETIONARY DOTTING FOR ARTIFACT CONTROL  
IN INCREMENTAL PRINTING

RELATED PATENT DOCUMENTS

Closely related documents are other, coowned U. S. utility-patent applications filed in the United States Patent and Trademark Office generally contemporaneously with this document — and also hereby incorporated by reference in their entirety into this document. One is in the names of Lain et al., and entitled "RANDOMIZED SUPERPIXELS TO ENHANCE MULTILEVEL IMAGE QUALITY IN ECONOMIC, FAST INCREMENTAL-PRINTING ERROR DIFFUSION" — and subsequently assigned utility-patent application serial 09/642,416. Lain is of interest for general context but especially the implementation of random selection of specific dots to be discretionarily augmented. Another such document is in the names of Garcia-Reyero et al., and entitled "IMPROVEMENTS IN AUTOMATED AND SEMIAUTOMATED PRINTMASK GENERATION FOR INCREMENTAL PRINTING" — and subsequently assigned utility-patent application serial 09/632,197, and issued as U. S. Patent 6,443,556. The Garcia-Reyero document and others cited in it are particularly pertinent as to masking strategies implemented through a family of program techniques dubbed "Shakes", especially including downweighting of print elements (e. g. nozzles) that are weak or misaimed; these strategies assume that such elements have been or will be identified. A third related document is in the names of Cluet et al., and identified and entitled "PRINTING AND MEASURING DIRECTLY DISPLAYED IMAGE QUALITY, WITH AUTOMATIC COMPENSATION, IN INCREMENTAL PRINTING" — and subsequently assigned utility-patent application serial 09/642,418.

1 Cluet teaches how to find bad nozzle groups, to facilitate  
2 compensating in weights as by the Garcia-Reyero documents.  
3 Also of interest is U. S. utility-patent application  
4 serial 09/252,163, later issued as U. S. Patent 6,690,485,  
5 of Borrell — a coworker of the present inventor — who  
6 adds or "propletes" inking to linearize saturation. More  
7 remote but of interest are depletion techniques generally,  
8 and particularly work on reverse undercolor adjustments  
9 e. g. in U. S. 5,473,446 of Perumal.

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18 FIELD OF THE INVENTION

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20 This invention relates generally to devices and  
21 procedures for printing text or graphics on printing media  
22 such as paper, transparency stock, or other glossy media;  
23 and more particularly to a scanning thermal-inkjet machine  
24 and method that construct text or images from individual  
25 ink spots created on a printing medium, in a two-dimen-  
26 sional pixel array. The invention is applicable to vari-  
27 ous kinds of printing devices including facsimile machines  
28 and copiers as well as printers. The invention employs  
29 printmode techniques to conceal printing artifacts, par-  
30 ticularly including certain forms of banding.